

ABSTRACT

[Abstract]

[Object] In a deposition system for generating airborne fine particles containing a thin film-forming component by a laser ablation process, a sputtering process, an arc discharge process, or another process to attach the airborne fine particles to a substrate, to prevent a thin film from being contaminated using a filter for trapping droplets.

The filter is shaped so as to be readily manufactured at low cost, can readily trap fine particles, and securely prevent the release of the trapped fine particles.

[Solving Means] A rotary porous filter plate includes a disk having a large number of perforations extending therethrough and is rotated on a rotary shaft connected to the center of the disk at high speed. The rotary porous filter plate is disposed between the substrate and a target such that fine particles flying through the perforations are deposited on the substrate but fine particles which fly low speed and which are transformed into droplets are trapped in the perforations. The sum of the areas of portions of the perforations is 80% or more of the surface area of the rotary porous filter plate. The perforations each have end portions and an intermediate portion having a diameter greater than those of the end portions, the end portions being located close to surface regions of the filter plate.